

Name ANSWER KEY Period _____

Geometry Unit 12 Worksheet #1 - Parts of a Circle and Tangents

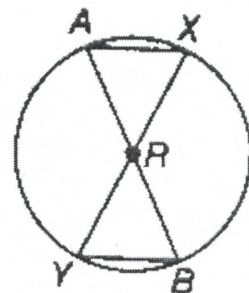
For #1-4, use the circle at the right to name ALL of the following parts.

1. Name 4 radii \overline{RA} , \overline{RX} , \overline{RB} , \overline{RY}

2. Name 4 chords \overline{AX} , \overline{AB} , \overline{BY} , \overline{XY}

3. Name 2 diameters \overline{AB} , \overline{XY}

4. Name the center of the circle R



For #5 - 9, match the name that best describes the segment or point.

5. \bullet C A

A. Center

6. \overline{CD} C

B. Diameter

7. \overline{AB} G

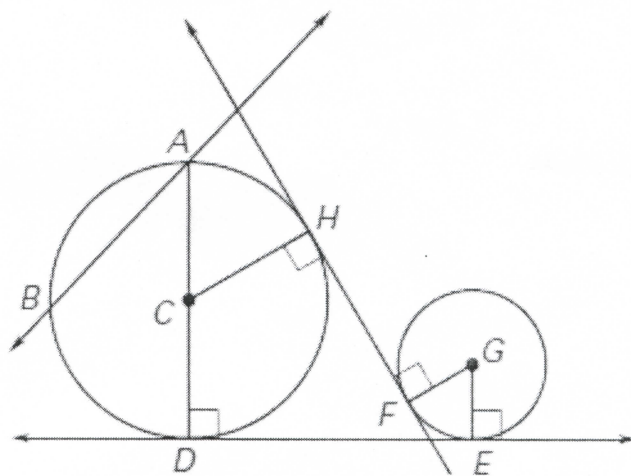
C. Radius

8. \overline{AD} B

E. Tangent

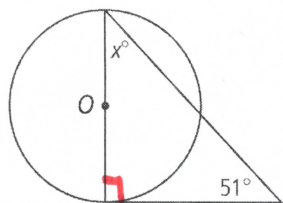
9. \overline{DE} E

G. Chord



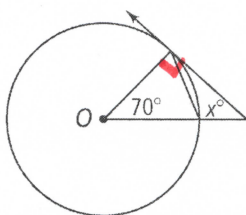
For #10 - 12, assume that any lines that appear to be tangent are tangent to the circle. Find the value of x .

10.



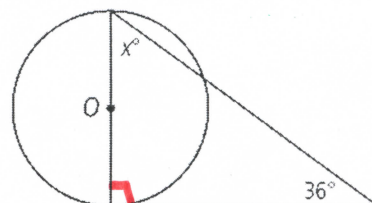
$$x = 39^\circ$$

11.



$$x = 20^\circ$$

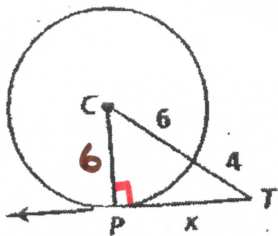
12.



$$x = 54^\circ$$

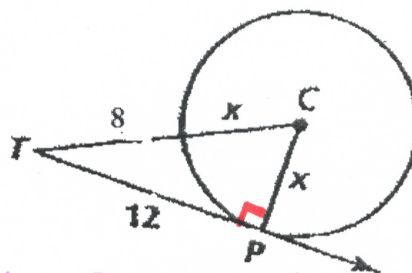
For #13 - 18 assume any lines that appear to be tangent are tangent. Solve for the value of x .

13.



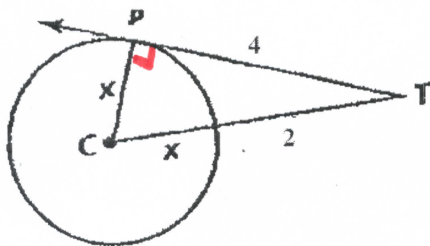
$$\begin{aligned} 10^2 &= 6^2 + x^2 \\ 100 &= 36 + x^2 \\ 64 &= x^2 \\ 8 &= x \end{aligned}$$

14.



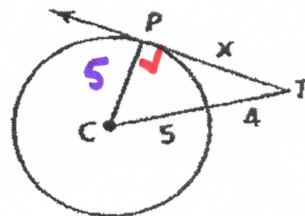
$$\begin{aligned} (8+x)^2 &= x^2 + 12^2 \\ x^2 + 16x + 64 &= x^2 + 144 \\ 16x &= 80 \\ x &= 5 \end{aligned}$$

15.



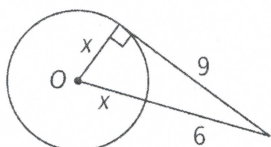
$$\begin{aligned} (x+2)^2 &= x^2 + 4^2 \\ x^2 + 4x + 4 &= x^2 + 16 \\ 4x &= 12 \\ x &= 3 \end{aligned}$$

16.



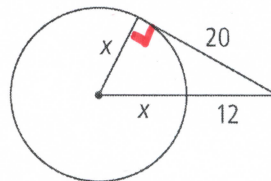
$$\begin{aligned} 9^2 &= 5^2 + x^2 \\ 81 &= 25 + x^2 \\ 56 &= x^2 \\ 7.48 &= x \end{aligned}$$

17.



$$\begin{aligned} (x+6)^2 &= x^2 + 9^2 \\ x^2 + 12x + 36 &= x^2 + 81 \\ 12x &= 45 \\ x &= 3.75 \end{aligned}$$

18.



$$\begin{aligned} (x+12)^2 &= x^2 + 20^2 \\ x^2 + 24x + 144 &= x^2 + 400 \\ 24x &= 256 \\ x &= 10\frac{2}{3} \text{ or } 10.67 \end{aligned}$$